1: Burrows--34 (1947-48) Woleaians
116, 227, 245 Ifalik

"The slender leaflet midribs (logto) some 1/8 inch in diameter, where the midrib of the whole leaf is several inches--are useful where lightness and flexibility are necessary. On a frame of stiffer withes, lengths of leaflet midrib are lashed criss-cross to make a fish trap (ul pam) of the smaller size. These are set on the bottom in shallow water, weighted down with sand and baited with crushed crabs, to catch small fish."

1: Burrows--83A (1947-48) Woleaians
116, 231, 301, 227 Ifalik

"A necklace made of dogs' teeth is shown in one of Damm's illustrations. These are not now common; I saw none. About the only part of a domestic animal that is in common use, except for food, is feathers. A rooster's long tail feathers effectively top off a male dancer's head-dress. Tufts of smaller feathers are lashed to fish hooks for a lure. None of these uses of domestic animals involves any noteworthy development of technology."

1: Burrows--83A (1947-48) Woleaians
116, 136, 227 Ifalik

"Wild animals, particularly sea creatures, are used in more varied and ingenious ways. The skin of the fish called rel, which has a silvery gleam in some lights, is wrapped around the shanks of fish hooks to serve as a lure, usually in connection with a tuft of feathers."

1: Burrows--83A-83B (1947-48) Woleaians
116, 321, 227 Ifalik 1.2

"Pearl shell and turtle shell are combined in the bonito hook (pā). This is of a type widespread in Oceania. It is composed of two pieces, a pearl-shell shank and a turtle-shell point. In the thick end of the shank a hole is bored to attach the line. (As this end is nearer the fisherman when in use, it is convenient and customary to call it the proximal end.) Little grooves are cut in the sides of the distal end to hold the lashings which attach the turtle-shell point. There are two of these lashings. In a specimen collected on Ifalik, which is now in Bishop Museum, Honolulu, both lashings pass through holes in a proximal projection of the point. Damm illustrates both this type and another, which has only one hole, for the distal lashing. In this type the proximal lashing passes entirely around the projection of the point, which flares out at the [83B] end to keep the lashing from slipping off.

Local variations in attachment of point to shank on bonito-hooks have been studied by Te Rangi Hiroa (Dr. Peter H. Buck). Following his lead, the writer compared types in different parts of Polynesia (Burrows 1938), and came to the conclusion that the type with two holes in a proximal projection of the point was invented in western Polynesia. Its occurrence as far west as Ifalik throws doubt on that conclusion. Fuller data from Micronesia will probably make possible a clearer reconstruction of the invention and diffusion of bonito hooks in Oceania.

The shank is shaped like the body of a small fish. This, and its pearly gleam, quite

like that of a fish's skin and scales, make it a most effective lure. As Buck has pointed out, shanks can be made of different colors by grinding off more or less of the outer layers of the shell. This is done deliberately, and the fisherman chooses which hook to use according to the light at the moment, or the kind of small fry on which the bonito are feeding, or by trial and error. Three names for hooks of different colors were told to me on Ifalik: renifār, with yellowish lustre; alo, bluish; and reneverale, reddish or coppery. Damm lists four names collected by Sarfert, none of which corresponds to these. Probably both lists are correct as far as they go, but incomplete.

As an additional lure, many bonito hooks have, lashed to the distal end, a tuft of feathers or of white fibers from the roots of the plants called guan and bogo li le pā."

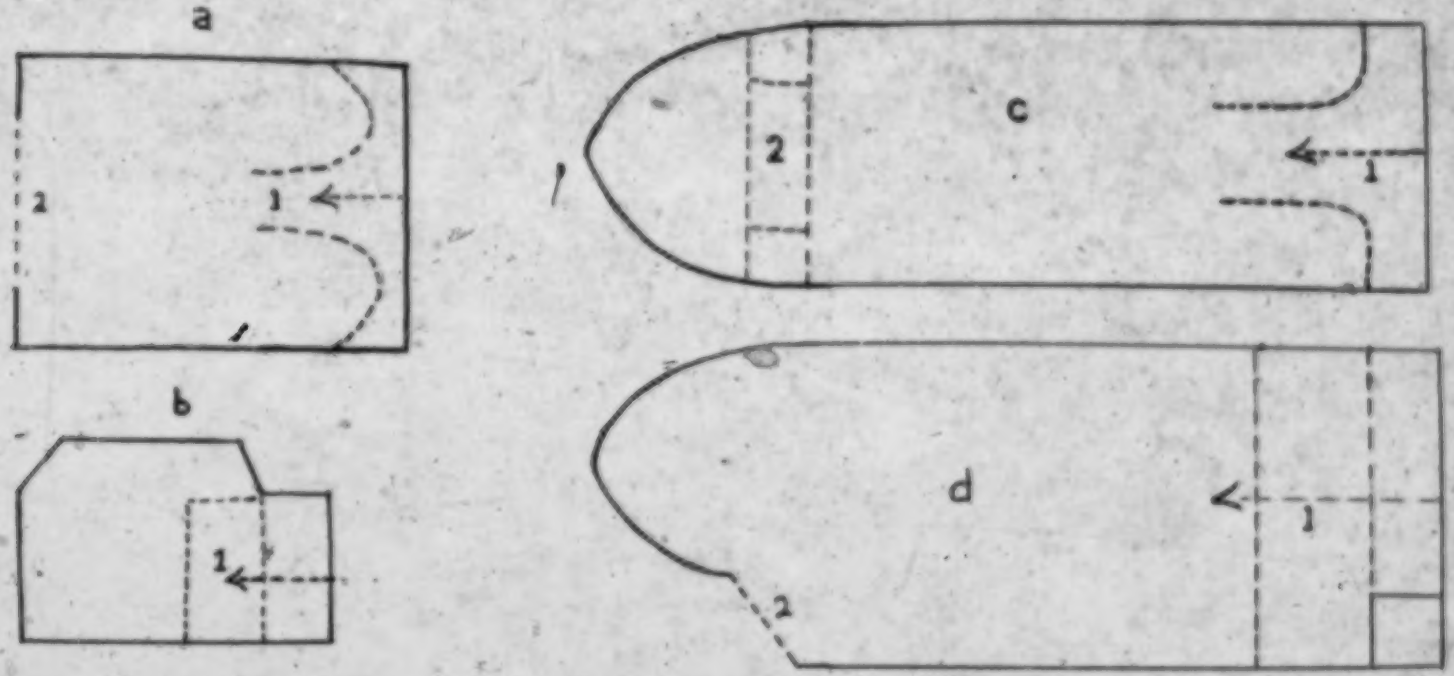
1: Burrows--83H-83I (1947-48) Woleaians
116, 227 Ifalik

"The only kind of fishing device that is constantly in use is a permanent weir (gamei) built of blocks of coral. These are set up along the beach on the lagoon side of Falārik, --evidently the shore of Falālap is not considered suitable for them, perhaps because most of it, instead of sandy beach, is irregular, shelving more steeply, and of coarse gravel. The shape of a gamei as indicated in Fig. 20, is something like a broad arrowhead. They are made with their points away from shore. The single wall that would correspond to the shaft of the arrow extends out from approximately high water mark. The double walls, corresponding to barbs of an arrowhead, average 30 to 35 feet long. At high tide they are covered with a foot or two of water; at low tide they [83I] rise out of water from a few inches to about a foot. Fish that come close to shore at high tide, mostly by night, are expected to follow the single wall to seaward as the tide goes out, and so to be led into the V-shaped space between the double walls. When the water is below the top of the walls, they can not escape.

During our stay on Ifalik (late July to early February), there was only one catch of consequence in such a weir, and that in only one out of four of them. On the morning of December 15 we were given five fish out of a catch estimated by Maroligar at 100. The largest, somewhat less than a foot long but not improbably the best of the lot, was one of the several kinds that in Hawaii would be called [illegible]apio or--in a restaurant--'baby ulua.' The others seemed to me to be horse mackeral--in Hawaii akule; but Maroligar insisted they were not the same as the picture of akule in Hosaka's book.

1: Burrows--83H-A (1947-48) Woleaians
116, 227 Ifalik

"Fig. 19. -Fish traps. a, small trap, plan; b, small trap, side elevation. c, large trap, plan; d, large trap, elevation. 1, narrow entrance; 2, door for removing fish."



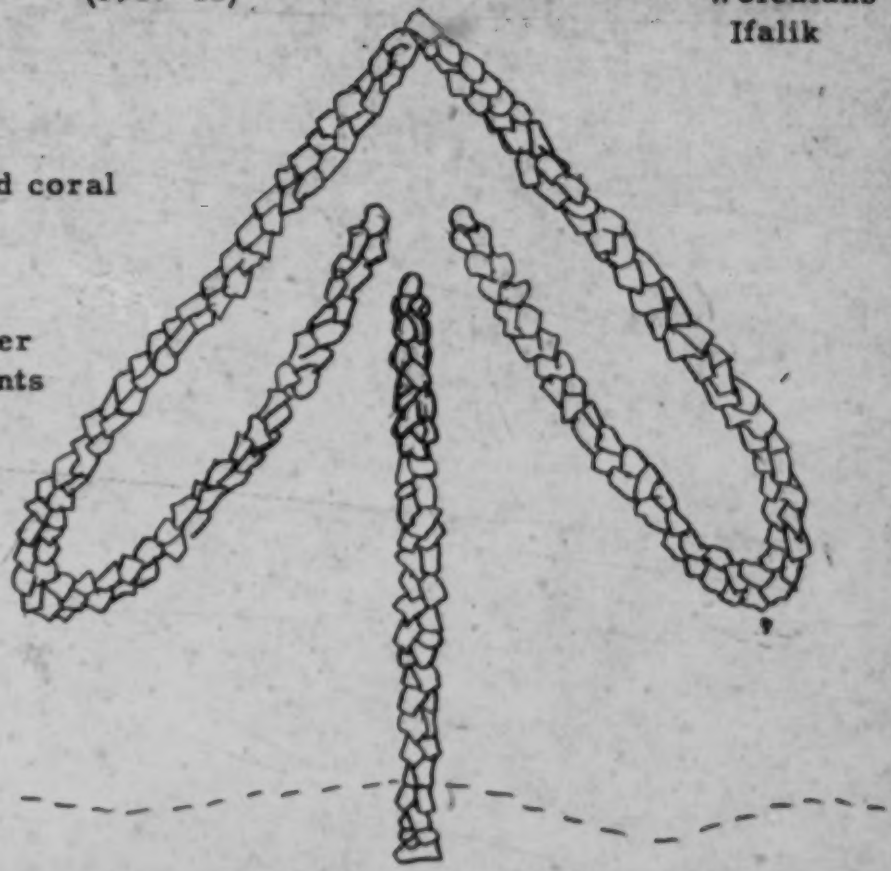
1: Burrows--83H-B
116, 227

(1947-48)

Woleaians
Ifalik

"Fig. 20. -Fish weir (gamei) of piled coral blocks.

The dotted line indicates high water mark on the beach. The weir points into the lagoon. Its arms are perhaps 50 feet long."



Someone took a glance at each of the gamei every morning; but no one was disappointed to find them empty. It is only on rare occasions, when a run of small fish enters the lagoon, that the weirs are sometimes so full that the fish can be scooped out by the netful. However, the labor of building them has to be expended only once, after which a little repair work now and then will keep them in working condition indefinitely. Good catches, even though they come months apart, are worth that much trouble."

1: Burrows--83I (1947-48) Woleaians
116, 227, 286, 171 Ifalik 1-2

"The kinds of fishing that require the largest number of men, and yield most of the large catches of fish, are done with nets. In one of the commonest and most productive methods, dip-nets are used for the final catch, but the fish are first herded together by what amounts to a movable weir. It is made of a long line of sennit rope and a number of green coconut leaves, which are split, and the halves tied along the line. Men wade out with it into shallow water, usually in the lagoon. They extend it to its full length, then sweep as large an area as it will cover by bringing the ends together. One end may be anchored, and the other brought around to meet it; but more often, within my observation, both ends were moved. The projecting coconut leaflets scare the fish, and drive them ahead of the line as it is pulled in and the circle narrowed. When the fish are enclosed in quite a small space, they are scooped up with dip-nets.

This technique, carried out on a small scale, is called sengango; on a larger scale, rop. Although it sometimes fails, it is the most reliable resource yet mentioned. When a good supply of fish is wanted for some special occasion, such as a feast on the completion of some public task, the kind of fishing tried is as often rop as any other.

Whether the word rop is a loan from English, or whether the resemblance to our 'rope' is a coincidence, I could not make out. The latter seems more likely. It is used only for the method of fishing, not for sennit rope in any other connection. This fishing technique is widespread--essentially the same as Hawaiian hukilau, for instance-- so it

is presumably ancient. A study of the distribution of the technique and the name would probably clear up this question."

1: Burrows--83K-A (1947-48) Woleaians
116, 227 Ifalik

"Fig. 21. -Shuttle used in making fish nets. Made of split bamboo.
(Shuttles of the same type, but usually of hard wood instead of bamboo, are used in weaving.)"

1: Burrows--111 (1947-48) Woleaians
116, 422, 227 → Ifalik

"The smaller fish-traps made by individual men are used, primarily by the maker, in small-scale fishing for his household. Any male member of the household--male, because women do not take part in this kind of fishing--would feel free to use such a trap, but would pretty surely ask the maker first, if there was any chance of his wanting to use it himself."

1: Burrows--111-112
116, 227, 422

(1947-48)

Woleaians
Ifalik

"Larger fish-traps are made in the canoe-houses by groups of men, usually [112] of the same neighborhood but not necessarily of the same household. They are kept in the canoe-house, and taken out in large sailing canoes, on the order of a chief. As these are usually district expeditions, the traps are virtually district property."

6: Senfft--57
116, 227

(no date) 1905

Woleaians
Woleai
Lamotrek

Besides weir baskets and nets (jateng), as well as the kite (sellegatschoik) mentioned above, the natives use spears for fishing (owai). These are made of coconut wood and have a barb. There are also fishbaskets (ulpam) which are very skilfully made, and fishhooks (go), which are kept in a small wooden box (saup) together with the fishing lines.

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

133 sand. Out from the beach there was a hundred yards or so of coral platform, largely exposed at low tide, then finally the edge of the reef itself against which the great rollers of the Pacific broke their force all the year around.

133 361 The other inhabited island, Falalap, was rather different: a large, rounded blob sticking out into the sea and spoiling the neat circle of the atoll. The habitations were all on the northwest end of the island, across the narrow pass from Falarik. Here, too, there was a maintained park-like area, corresponding to the lagoon-side coconut grove of Falarik: but on Falalap, coconuts and large breadfruit trees were interspersed, giving a different "feel" to the landscape.

133 137 262 The center of Falalap was largely a great swampy area carefully cultivated by the women of both islands. Two kinds of aroids (taro), *Colocasia* and *Cyrtosperma*, were grown there for their edible, starchy roots which, with breadfruit, formed the staple food of the atoll. We did not get around to exploring this region in any detail until late in the summer.

123 206 The mapping operation was kept up fairly steadily for several days, but there were always intermissions. On Friday afternoon—the second day of the mapping—Bakal and Yani had no difficulty in persuading us to knock off mapping and go spear fishing. We all piled into Bronson's skiff and rowed over to the shore of Ella, outside the pass into the lagoon. Don was rather snooty about this skiff, remarking that a Western rowboat looked like a garbage scow beside the trim and speedy Ifalukian canoes. But Yani and Bakal liked it—perhaps partly because it was foreign, but also because it was steady and because it [136] could hold several people easily. Don, maintaining his scorn, called it the BWUP after one of the more ungainly species of trigger-fish.

● 227 Yani and Bakal each had steel-pointed wooden spears, about fifteen feet long; and short, slender steel spears. The long spears were for poking; the short spears were shot from a sling. The sling looked like a strip of inner-tube; at one end was a string loop, tied on firmly; at the other end the rubber was tied into a loop just large enough to slip over the thumb. With the rubber loop over the right thumb, the string loop was pressed over a slight notch in the butt of the spear, and the spear then simply pulled back with the left hand and let go. It worked like a Hawaiian sling spear, with the hand replacing the hollow bamboo grip.

41: Bates & Abbott N-5 (1953) 1958
OR21 Woleai OR21
Ifaluk

Polynesian cultures, had almost endless ways of catching fish. Individuals or small groups fished with spears or with hook and line. A method that appealed to me particularly was to attach the hook and line to a kite, which was sailed from a canoe in the lagoon: thus combining the pleasures of fishing with those of kite-flying (one of the numerous instances where I couldn't decide whether a particular operation should be called "work" or "play"). There were also a variety of ways of trapping fish, with traps ranging from the large, permanent stone weirs built along the lagoon shore, down through various types of wattle traps, to improvised affairs of plaited coconut leaf sometimes set by the women in the shallows—the only fishing operation of the women, aside from collecting crabs, shellfish and the like. Women, in fact, were subject to various sorts of taboos in relation to fishing, and sex was strictly suppressed during a prolonged fishing operation.

There were various ways of catching special fish, like tuna, bonito and flying fish, when these appeared, but I didn't get to see any of these operations. Later in the summer, however, Don and I did spend a very active day trying to get a complete photographic record of a lagoon seining operation—the kind of fishing called yating.

The Ifalukians had an immense supply of seines—great piles stored in each of the canoe houses. The accumulation of seines and of rope seemed a direct consequence of the almost compulsive male habit of making sennit twine. Whenever a group of men were sitting around gossiping, or helping us gather information, or quietly watching the horizon, some of them would pull handfuls of fluffy leached and pounded coconut fibers out of their purses, and start twisting them into twine. This process, like knitting with the women of the West, did not interfere with either conversation or thought; and since it went on constantly, the twine output was considerable. The sennit twine had a great many different uses, but much of it ended woven into seines.

In the case of the particular yating operation that we photographed, the morning started with groups of men shouldering lengths of seine and carrying them down from the canoe houses to load them into canoes beached on the lagoon shore. The canoes took off in orderly procession, each dumping its seine in turn and connecting with the next until there must have been nearly a mile of seine forming a great